

REMARKS

Applicant thanks the Examiner for the courtesy and thoughtful observations and suggestions offered during the interview of March 17, 2004.

By this amendment, claims 1, 55, 57 and 65 have been amended, and new claims 97-243 have been added. Claims 1 and 48-243 are under consideration.

Claim Rejection under 35 USC 112

Claims 1, 48-70, 72-96 or the application stand rejected under 35 USC 112, first paragraph, for lack of enablement.

As a result of the information obtained during the interview of March 17, 2004, it is Applicant's understanding that claims directed to the following categories of DNA sequences listed in the application are enabled and would be allowable:

- 1) DNA or amino acid sequences with at least 90% homology to listed sequences;
- 2) variant amino acid sequences containing conservative amino acid substitutions; and
- 3) polynucleotides that hybridize to listed sequences under conditions of high stringency.

Applicant further understood that claims directed to insect, yeast, plant, bacterial, fungal and mammalian cells would be favorably considered.

The existing independent claims of the application are claims 1, 55, 57 and 65. Claims 1, 55, 57 and 65 have hereby been amended to reflect category #1, i.e. to recite that the (CMP- SA) synthase gene comprises a) a nucleotide sequence represented by SEQ ID NO: 3 or b) a polynucleotide that is at least 90% homologous to the nucleotide sequence represented by SEQ ID NO:3, and that the SAS gene comprises a) a nucleotide sequence represented by SEQ ID NO: 5 or b) a polynucleotide that is at least 90% homologous to SEQ ID NO:5. Applicant submits that independent claims 1, 55, 57 and 65 and their dependent claims are thus patentable.

In view of the foregoing, Applicant respectfully requests withdrawal of this rejection.

New Claims.

New claims 97-243 have been drafted to reflect categories of enabled, allowable subject matter. The new claims can be grouped into four claim families (1-4) as follows:

1) Claims 97-111, 112-126 and 127-141 are based on (i.e. are analogous to) **Claim 1** and recite

a) 97-111: polypeptide sequences which are at least 90% homologous to SEQ ID NOS: 4 and 6 or 8;

b) 112-126: variant polypeptide sequences of SEQ ID NOS: 4 and 6 or 8 which contain conservative substitutions;

c) 127-141: polynucleotides which hybridize to nucleotide sequences represented by SEQ ID NOS: 3 and 5.

2) Claims 142-150, 151-159 and 160-168 are based on **Claim 55** and recite

a) 142-150: polypeptide sequences which are at least 90% homologous to SEQ ID NOS: 4 and 6 or 8;

b) 151-159: variant polypeptide sequences of SEQ ID NOS: 4 and 6 or 8 which contain conservative substitutions;

c) 160-168: polynucleotides which hybridize to nucleotide sequences represented by SEQ ID NOS: 3 and 5.

3) Claims 169-184, 185-200 and 201-216 are based on **Claim 57** and recite

a) 169-184: polypeptide sequences which are at least 90% homologous to SEQ ID NOS: 4 and 6 or 8;

b) 185-200: variant polypeptide sequences of SEQ ID NOS: 4 and 6 or 8 which contain conservative substitutions;

c) 201-216: polynucleotides which hybridize to nucleotide sequences represented by SEQ ID NOS: 3 and 5.

4) Claims 217-225, 226-234 and 235-243 are based on **Claim 65** and recite

a) 217-225: polypeptide sequences which are at least 90% homologous to SEQ ID NOS: 4 and 6 or 8;

b) 226-234: variant polypeptide sequences of SEQ ID NOS: 4 and 6 or 8 which contain

conservative substitutions;

c) 235-243: polynucleotides which hybridize to nucleotide sequences represented by SEQ ID NOS: 3 and 5.

Sequence homology for nucleic acid sequences is described in the specification at pages 42 (beginning at paragraph 0241) and through page 44 (paragraph 0244). Sequence homology for amino acid sequences is described in the specification at pages 44 (beginning at paragraph 0245) through page 46. Conservative amino acid substitutions are described in the specification, for example, at pages 47, 48 and 49 (paragraphs 0254-0258). Hybridization under stringent conditions is described in the specification at page 50, paragraph 0262. Thus, Applicant submits that the new claims do not add any new matter.

Applicant submits that the criteria for enablement set out by the Examiner during the interview has been met in each of the new claims. Applicant respectfully requests examination and allowance of new claims 97-243.

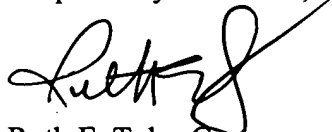
Formal Matters and Conclusion

In view of the foregoing, Applicant submits that all rejections have been successfully traversed and that claims 1 and 48-243 should be deemed new and unobvious over the prior art of record. The Examiner is respectfully requested to reconsider and pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Please charge any underpayment or credit any overpayment of fees to attorney's deposit account #50-2041.

Respectfully submitted,



Ruth E. Tyler-Cross
Reg. No. 45,922

Whitham, Curtis & Christofferson
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
703-787-9400